P-3 Orion 04/27/18

Aircraft: P-3 Orion - WFF (See full schedule)
Flight Number: 2018 OIB Arctic -Science #17
Payload Configuration: 2018 OIB Arctic
Nav Data Collected: No
Total Flight Time: 8 hours
Submitted by: Janet Letchworth on 04/29/18
Flight Segments:

From:	BGSF	**To:**	BGSF
Start:	04/27/18 10:37 Z	**Finish:**	04/27/18 18:37 Z
Flight Time:	8 hours		
Log Number:	18P008	**PI:**	Nathan Kurtz
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	This flight surveyed the Helheim-Kangerdlugssuaq line.		

Flight Hour Summary:

	18P008
Flight Hours Approved in SOFRS	201.2
Total Used	190.4
Total Remaining	10.8

18P008 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
03/13/18	2018 OIB Arctic - Airworthiness Test Flight	Other	0.8	0.8	200.4	
03/14/18	2018 OIB Arctic -Project Test Flight - Laser	Other	2.6	3.4	197.8	
03/15/18	2018 OIB Arctic -Project Test Flight - Radar	Other	5.7	9.1	192.1	
03/18/18	2018 OIB Arctic -delta ATF	Other	0.8	9.9	191.3	
03/20/18	2018 OIB Arctic -Transit to Thule	Transit	7.9	17.8	183.4	
03/22/18	2018 OIB Arctic - Science #1	Science	7.8	25.6	175.6	
04/03/18	2018 OIB Arctic - Science #2	Science	7.9	33.5	167.7	
04/04/18	2018 OIB Arctic - Science #3	Science	8.1	41.6	159.6	
04/05/18	2018 OIB Arctic - Science #4	Science	8	49.6	151.6	
04/06/18	2018 OIB Arctic - Science #5	Science	8.8	58.4	142.8	
04/07/18 - 04/08/18	2018 OIB Arctic - Science #6	Science	8.1	66.5	134.7	
04/08/18 - 04/09/18	2018 OIB Arctic - Science #7	Science	8.3	74.8	126.4	
04/14/18 - 04/15/18	2018 OIB Arctic - Science #8	Science	7.7	82.5	118.7	
04/16/18	2018 OIB Arctic - Science #9	Science	8.2	90.7	110.5	

04/18/18	2018 OIB Arctic - Science #10	Science	8	98.7	102.5
04/19/18	2018 OIB Arctic - Science #11	Science	7.7	106.4	94.8
04/20/18	2018 OIB Arctic -Transit to Kanger	Transit	4.2	110.6	90.6
04/21/18	2018 OIB Arctic - Science #12	Science	8.1	118.7	82.5
04/22/18	2018 OIB Arctic - Science #13	Science	6.5	125.2	76
04/23/18	2018 OIB Arctic - Science #14	Science	8.2	133.4	67.8
04/25/18	2018 OIB Arctic - Science #15	Science	7.7	141.1	60.1
04/26/18	2018 OIB Arctic - Science #16	Science	8.8	149.9	51.3
04/27/18	2018 OIB Arctic - Science #17	Science	8	157.9	43.3
04/29/18	2018 OIB Arctic - Science #18	Science	8.3	166.2	35
04/30/18	2018 OIB Arctic - Science #19	Science	9.3	175.5	25.7
05/01/18	2018 OIB Arctic - Science #20	Science	7.4	182.9	18.3
05/03/18	2018 OIB Arctic -Return Transit Leg #1	Transit	6.4	189.3	11.9
05/03/18	2018 OIB Arctic -Return Transit Leg #2	Transit	0.6	189.9	11.3
05/03/18	2018 OIB Arctic -Return Transit Leg #3	Transit	0.5	190.4	10.8

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

Related Science Report:

OIB - P-3 Orion 04/27/18 Science Report

Mission: OIB

Mission Summary:

Mission: Helheim-Kangerdlugssuaq

Priority: Baseline

This is a repeat mission, and is very similar to missions flown in 2010, 2011, 2012 and 2013. It captures centerline surveys of the two main branches of Helheim, of Kangerdlugssuaq, Fenris and of several branches of Midgard glaciers. We also refly the centerline of the Hutchinson Glacier, and establish a new centerline of a glacier which empties into the fjord of Kangerdlugssuaq Glacier just beyond its terminus. For 2018 we extend the main (northwest) and west centerlines of Helheim Glacier to above the 2000m contour line.

The forecast for the mission was good but not perfect. We opted to accept the unlikelihood of surveying Midgard and the French-named glaciers east of Helheim, due to persistent low cloud, to accept surveying more than two thirds of this baseline mission. About a quarter of the way across the ice sheet, the clouds dissipated and we were able to range the surface with laser altimetry. We operated the Headwall hyperspectral imager down the flowline of Helheim Glacier and into the fjord and again on the return. The mélange was exceptionally dense in front of Helheim, which had recently calved a large iceberg along its northern terminus, but otherwise large portions of Sermilik Fjord were as clear as some of us had ever seen then. To our surprise, solar heating had

mostly dissipated across the Helheim region, and we were able to complete the entire set of flowlines in this region. Numerous polar bear tracks - practically highways - were observed in the fjords, including relatively close to the calving front. Kangerdlugssuaq also had a dense mélange and a bow-shaped terminus. Mild turbulence was experienced on the south tributary of Kangerdlugssuaq Glacier. ATM T6 experienced a ~15 min outage during the survey of Steenstrup Glacier. We performed a west-east ramp pass at 1200 ft.

Attached images:

1. Map of today's mission (John Sonntag / NASA)
2. Windswept nunatak (Joe MacGregor / NASA)
3. A lone iceberg amidst sea ice along the coast east of Sermilik Fjord (Joe MacGregor / NASA)
4. The terminus of Steenstrup Glacier and the edge of the mountains meet along the East Greenland coast (Joe MacGregor / NASA)
5. Helheim Glacier (left) recently calved a large iceberg (right) that has not capsized or overturned yet (Joe MacGregor / NASA)
6. The transition between ice mélange and open fjord was often abrupt today in East Greenland (Joe MacGregor / NASA)
7. Polar bear tracks and probing holes (Joe MacGregor / NASA)

Images:

Map of today's mission

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Windswept nunatak

Read more

A lone iceberg amidst sea ice along the coast east of Sermilik Fjord

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The terminus of Steenstrup Glacier and the edge of the mountains meet along the East Greenland coast

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Helheim Glacier (left) recently calved a large iceberg (right) that has

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The transition between ice mélange and open fjord was often abrupt

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Polar bear tracks and probing holes

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Submitted by: Joseph MacGregor on 04/27/18

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